

*Butel*  
*Proy*  
Work Order ID 57491

April 7, 2010 11:22:40 AM



Page 1

Item ID: D3049-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Bearpaw

Start Date: 08/04/2010 Start Qty: 8.00

Required Date: 12/04/2010 Req'd Qty: 8.00

Reference: *10-04-07*

Cust Item ID:

Customer:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3049

Rev A1

110

0.00



Waterjet

Memo

0.00

FLOW CNC Waterjet

CUT BLANK AS PER FILE D3049-1\_BLANK

*B 10-4-8*

*8*

120

0.00



HAAS I

HAAS CNC VERTICAL MACHINING #1

Memo

0.00

HAAS CNC vertical machine #1

1-Inspect material for defects or damage prior to machining  
2-Machine as per Folio FA165 and Dwg D3049 Identify as D3049-1  
3-Deburr

*8*

*8*

130

0.00



QC

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

Quality Control

*8*

*8*

## Lean Is...

- “LEAN IS – from an operations perspective... a system that cuts costs & inventories rapidly to free cash, which is critical in a slow economy. It also supports growth by improving productivity and quality, reducing lead times and freeing huge amounts of resources.
- Lean aims at reducing (if not eliminating) none value added activities in business processes.
- It's not a project.

**Work Order ID 57491**

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Page 2

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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

QC8- Inspect parts - second check

0.00

H.A 10/04/12

8

0



QC

Memo

0.00

Quality Control

170

Identify as per dwg & Stock Location: PDP

0.00

Packaging

Memo

57482

0.00



Packaging

Packaging

Rec'd 10/4/12 (8)

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/04/12  
10-4-12  
(8)



## Lean is...

- Promote customer-orientation rather than resource-orientation (produce for sales not for stock).
- A highly evolved method of managing an organization to improve the productivity, efficiency and quality of its products or services.
- Transforms how the company operates and how employees think about their work. Don't work harder but smarter by transferring your energy from the NVA to the VA activities.
- Has no end (there is no "done").

# Picklist Print

April 7, 2010 11:22:39 AM

Page 1

Work Order ID: 57491

Parent Item: D3049-1

Parent Item Name: Bearpaw


Comments:

Start Date: 08/04/2010

Required Date: 12/04/2010

Start Qty: 8.00

Required Qty: 8.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			120	sf	240.0000	27.2000			
												
UHMW 1" Black												

10-4-8

(8)

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
MAT	240	
112186	50	
113903	190	

113903



# Lean Is...

“LEAN IS... A mindset, or way of thinking

- A commitment to achieve a totally waste-free operation focused on the customer's success
- Achieved by simplifying and continuously improving all processes and relationships in an environment of trust, respect and full employee involvement
- It is about people, simplicity, flow, visibility, partnerships and true value as perceived by the customer.”

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	
<b>Description:</b> Bearpaw		<b>Part Number:</b> D3049-1	
<b>Inspection Dwg:</b> D3049 <b>Rev:</b> A1		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article      ☐ Prototype

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
A	Ø0.260	+0.005/-0.000	.260	✓			
B	0.93	+/-0.030	.927	✓			
C	0.40	+0.030/-0.000	.410	✓			
D	2.00	+/-0.030	2.00	✓			
E	10.250	+/-0.010	10.250	✓			
F	4.540	+/-0.030	4.54	✓			
G	5.88	+/-0.030	5.88	✓			
H	0.38	+/-0.030	.38	✓			
I	11.50	+/-0.030	11.50	✓			
J	0.07 x 45°	+0.030/-0.010	.07				
K	0.44 - 0.47	+/-0.000	.454	✓			
L	R0.25	+/-0.030	.25	✓			
M	0.38	+/-0.010	.382	✓			
N	0.95	+0.030/-0.010	.975	✓			
O	0.69	+/-0.030	.695	✓			
P	0.20	+/-0.030	.209	✓			
Q	23.00	+/-0.030	23.00	✓			
R	0.25 x 45°	+/-0.030	.25	✓			

<b>Measured by:</b> <u>8.8</u>	<b>Audited by:</b> <u>K.A</u>	<b>Prototype Approval:</b>	N/A
<b>Date:</b> <u>10/04/08</u>	<b>Date:</b> <u>10/04/12</u>	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue      P/O D135-692-011	KJ/RF	
B	08.05.06	Dimension I revised	KJ/DD	



# Lean principle

To be able to produce exactly:

- **what is required**
- **when it is required**
- **the quantity required**

by the next step in the process.

**Once a job started, it should ideally never stop**





610.24

16th 50/3

[illegible]

D3049-1 BEARPAW

NOTES:

- NOTES:  
1) BEARPAW IS SYMMETRIC ABOUT CENTER LINE  
2) MATERIAL: UHMW BLACK PER SPEC CONTROL DRAWING D2689,  
1.00" THICK (MACHINE TO 0.950)

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## Value stream mapping

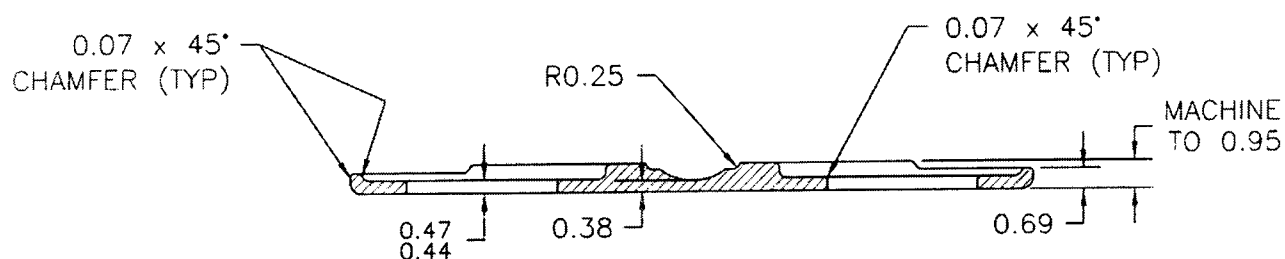
- Value stream mapping is **the best way to identify where the high payoff** opportunities are, yet value stream mapping is the lean tool most likely to **not be used by** companies doing pretend lean!



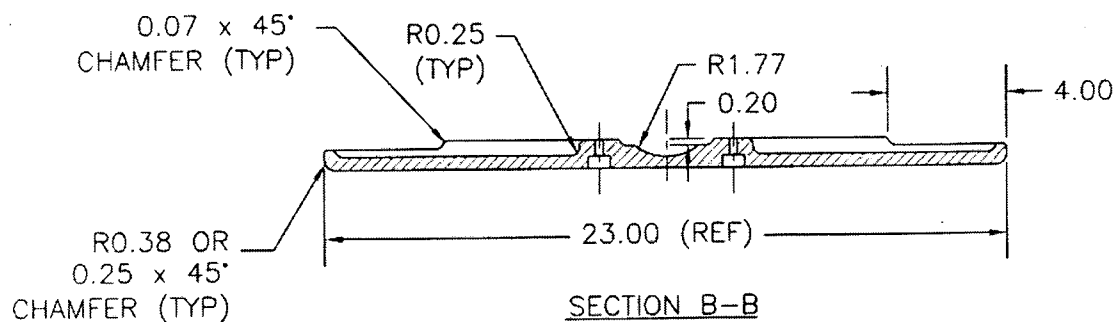
DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. D3049	REV. A SHEET 2 OF 2
DATE 01.10.18		TITLE BEARPAW	SCALE 1:6

RELEASED  
01.10.21 H

1/bht-50/m



SECTION A-A



SECTION B-B

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# Value stream mapping during Kaizen event.

